Supporting employees on the road: A case study on supporting self-directed learning in a self-managing software consultancy

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Abstract

Self-management as an organisational structure has been growing in popularity Finnish software consultancies. It emphasises organisation wide decentralisation of the typical managerial responsibilities and decision-making authority. Several benefits of self-management have been identified, but detailed discussion on practicalities of such organisations has been scarce. While many of these organisations adapting self-management stress employee learning as an important part of their culture, there have been few studies on how these organisations should support employee learning. The methods of self-directed learning offer potential recommendations, but their applicability to self-managing organisations has not been widely examined.

This thesis addresses the topic by examining how self-managing organisations are able to support the self-directed learning of their employees through three topics: First, employee perception of self-directed learning in a self-managing organisations was studied; Second, the support for self-directed learning provided was studied; And third, key organisational practices affecting self-directed learning were identified.

This thesis was a qualitative single case study on a Finnish software consultancy, Columbia Road. The empirical data consisted of eleven theme interviews of case company employees and internal documents. The interviewees included members of case company management and software development consultants. Data analysis was performed using a systematic combining process grounded to existing theory.

The results indicate that employees perceive self-directed learning positively and see it as a necessary practice when working in a self-managing organisation. At the same time, they expect organisational support for it, and support could be seen to increase effectiveness of learning and lower associated stress. Feedback collection, prioritising learning and identifying learning resources were noted as challenges. Furthermore, three key organisational practices affecting self-directed learning in software development consultancy were identified: project staffing, decision-making framework and organisational learning.

Keywords Self-directed learning, self-managing organisations, human-resource development, workplace learning

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Tiivistelmä

Itseohjautuvuus organisaatiorakenteena on yleistynyt suomalaisissa ohjelmistokonsultointiyrityksissä. Se pohjautuu koko organisaation kattavaan johtajien tehtävien ja päätöksentekovallan hajauttamiseen. Useita itseohjautuvuuden etuja on tunnistettu mutta näiden organisaatioiden käytäntöjen ja prosessien seikkaperäinen käsittely on kirjallisuudessa vaillinaista. Vaikka moni näistä organisaatioista painottaa työssäoppimisen tärkeyttä, on työntekijöiden oppimisen tukemisesta niissä vain vähän tutkimusta. Itseohjautuvan oppimisen työkalut tarjoavat mahdollisia suosituksia tähän, mutta niiden sopivuutta itseohjautuviin organisaatioihin ei ole tutkittu laajemmin.

Tämä työ käsittelee aihetta tutkimalla kuinka itseohjautuvat organisaatiot pystyvät tukemaan työntekijöidensä itseohjautuvaa oppimista kolmen kysymyksen kautta: Ensiksi, mikä on työntekijöiden käsitys itseohjautuvasta oppimisesta itseohjautuvassa organisaatiossa; Toiseksi, kuinka kohdeorganisaatio tukee itseohjautuvaa oppimista; Ja kolmanneksi, mitkä ovat itseohjautuvassa organisaatiossa tärkeitä käytäntöjä itseohjautuvan oppimisen tukemiseksi.

Työ toteutettiin kvalitatiivisena tapaustutkimuksena, jonka kohteena oli suomalainen ohjelmistokonsultointiyritys Columbia Road. Tutkimuksen lähdeaineisto koostui yhdestätoista yrityksen työntekijän teemahaastattelusta, sekä sisäisistä dokumenteista. Haastateltavat olivat yrityksen ohjelmistokehitykseen erikoistuneita konsultteja ja yrityksen johtoa.

Tulokset osoittavat haastateltavien näkevän itseohjautuvan oppimisen positiivisena, ja itseohjautuvissa organisaatioissa pakollisena, osana työnkuvaansa. Kuitenkin, itseohjautuvalle oppimiselle odotettiin samaan aikaan organisaation tukea, ja tuen nähtiin parantavan oppimisen tehokkuutta, sekä madaltavan siihen mahdollisesti liittyvää stressiä. Palautteen saaminen ja kerääminen, sekä oppimisen priorisointi suhteessa muuhun työhön tunnistettiin itseoppimisen haasteiksi organisaatiossa. Lisäksi, kolmena tärkeänä organisaation käytäntönä ohjelmistokonsultointiyrityksessä tunnistettiin konsulttien allokointi projekteihin, päätöksentekokäytännöt ja organisaation oppiminen.

Avainsanat Itseohjautuva oppiminen, itseohjautuva organisaatio, henkilöresurssien kehittäminen, työssäoppiminen

Contents

1 Introduction

1.1 Motivation

Self-management as an organisational structure has been growing in popularity in Finnish software consultancies (Torppa, 2019). This new approach has also been noted elsewhere in the industry, exemplified by Laloux's best selling book on the topic, Reinventing Organisations (Laloux, 2014), and in academia (Lee & Edmondson, 2017; Bernstein, Gino, & Staats, 2014; Gino, Staats, Hall, & Chang, 2013). While potential benefits are highlighted, detailed discussion on the practicalities of such organisations is lacking. The overall managerial challenges have received some academic attention (Manz, 1992; Pfeffer, 2013), but one area that has received less focus is support of employee learning in these organisations.

Self-managing organisations are principally based on the idea of decentralisation of managerial authority (Lee & Edmondson, 2017). However, decentralising authority in this way does not remove the necessity of the responsibilities and tasks typically handled by managers. While some unnecessary tasks are eliminated this way, the rest are delegated to individual employees. These new responsibilities require new skills and thus put pressure on employees to learn and improve themselves. At the same time as these new expectations arise, organisations are removing the typical employee responsible for supporting professional development of their reports–the manager.

Further, professional services firms have traditionally offered clear paths of professional development with very distinct career ladders to follow (Maister, 1982), but self-managing organisations are turning this relatively simple ladder into a lattice with bountiful options which require more active choices on the part of individual professionals (Benko & Anderson, 2010). Taken together, this lack of a straightforward career path and the pressing need to learn new skills drive learners to become more self-directed.

Self-directed learning, a central topic of adult education (Merriam, 2001), studies exactly this. More commonly known in some areas as lifelong learning, it is often defined as learning without the direction of a teacher, with the learner being responsible for the entire the learning process (Merriam, 2001). As employees are expected to take more and more responsibility on their personal development, the skills identified as central parts of self-directed learning are becoming even more important in the workplace. Thus, organisations transforming towards self-management should consider how they are able to support their employees self-directed learning.

The case company, Columbia Road, is a professional services firm offering consulting services in digital commerce. Being a part of Futurice Group, their organisational structure is built around the idea of self-management, transparency, trust and accountability (Heiskanen, Rikkinen, & Saksa, 2018). Learning has always been an important value in the Futurice Group, highlighted for example in the public Futurice Cultural Handbook (Heiskanen et al., 2018). Columbia Road has continued this by including in its strategy statement a goal to be the best place for their employees to learn. At the same time, it was acknowledged that there is work to be done to

reach that. This thesis began from an offhand question: “How could Columbia Road improve in helping our experts become even greater versions of themselves?”. As research on the connection between self-directed learning and self-managing organisations appears relatively sparse, the purpose of this thesis is to explore the question and provide direction for further research on the topic.

1.2 Research objective

The main objective of this thesis is to explore the support the case company could offer for the self-directed learning of its software development consultants, and to gain generalisable insights. Thus the overarching research problem is: *How should software consulting companies support self-directed learning of their employees?* The research problem is approached through three research questions:

1. *What is employee perception of self-directed learning in a self-managing organisation?*

2. *How does a self-managing consulting organisation support self-directed learning?*

3. *What are key organisational practices affecting self-directed learning in self-managing consultancies?*

The first and second questions are to clarify employee expectations on, and the perception of learning to build a basis for analysis of challenges and solutions. The third question aims to discover the organisational practices that organisations should consider implementing to support learning.

The research area is further narrowed with three limitations. First, the focus is on software developers even though the case company employs consultants in a variety of fields. This is to improve reliability of results on that group and to avoid confounding effects caused by different type of work. Second, the area of interest is how the organisation can support the learning of individuals, not how the organisation as a whole learns. While this is a related topic, the same practices are not likely to be equally suited for both. Third, while individual interviewee’s perceptions are discussed, the primary unit of study is the organisation. The interesting artifacts are the organisational practices and the individual perspectives considered are used to study those.

2 Theoretical framework

2.1 Self-directed learning

2.1.1 Definition of the concept

Self-directed learning is "an approach where learners are motivated to assume personal responsibility and collaborative control of the cognitive and contextual processes in constructing and confirming meaningful and worthwhile learning outcomes." (Garrison, 1997). Several other definitions also exist (e.g., Tough, 1967; Knowles, 1975) but the primary idea is the same: the learner, instead of the teacher, is the party responsible for all phases of learning: the planning, carrying out and evaluating one's learning. This is in contrast with a model where a teacher is in charge of some parts of the learning process; a type that is more common in, for example, pedagogy (Merriam, 2001).

The concept of self-directed learning was originally introduced by Tough (1967) to the adult education literature (Ellinger, 2004; Merriam, 2001) and has ever since been a central topic in adult education research (Garrison, 1997; Ellinger, 2004). Recently, it has been rising in relevance in the literature of organisational learning and human resource development (Merriam, 2001). Possibly signifying a change in how workplace learning is transforming from more formal methods of training towards self-directed learning (Ellinger, 2004).

More specifically, self-directed learning can be divided into four dimensions: motivation, self-monitoring, self-management and self-directed learning (Garrison, 1997). The first three are the foundational parts of the process and together these three then lead to the fourth dimension, self-directed learning. While these are explored as distinct dimensions, in practice they have considerable overlap with each other and should be considered together.

Starting with motivation, a cornerstone of learning, its primary role in self-directed learning is an obvious one: it is the force that drives a learner to try to learn new things. This is, however, not the only role. Motivation as a part of learning should be discussed as two separate issues: the aforementioned entering motivation and task motivation (Garrison, 1997). Entering motivation is what propels learners to start something new. Task motivation is sticking to commitments to learning goals.

The second dimension, self-monitoring, encompasses the cognitive and metacognitive processes of learning, such as thinking about learning and meaning-making about new knowledge (Garrison, 1997). In other words, it is the higher-order processes of one's learning and improvement. Crucial skills for self-monitoring thus are abilities to reflect and critical thinking. Lacking these, accurate self-monitoring, and thus effective self-directed learning, becomes challenging if not outright impossible.

The third dimension, self-management, is about control: the practical tools the learner uses to guide their learning and progress (Garrison, 1997). It includes areas such as learning methods, goal setting and task management. These are the skills necessary in both day-to-day learning and longer term management of the how and what to learn.

Finally, self-directed learning itself then manifests as a result of intentional

interaction between the three aforementioned dimensions. Motivation acts as both the initial driver for taking up the commitment of learning, and as a driver for self-monitoring and self-management. Self-management and self-monitoring together form the concrete basis of the continuous self-directed learning process. The interaction displayed in figure 1 then manifests as self-directed learning.

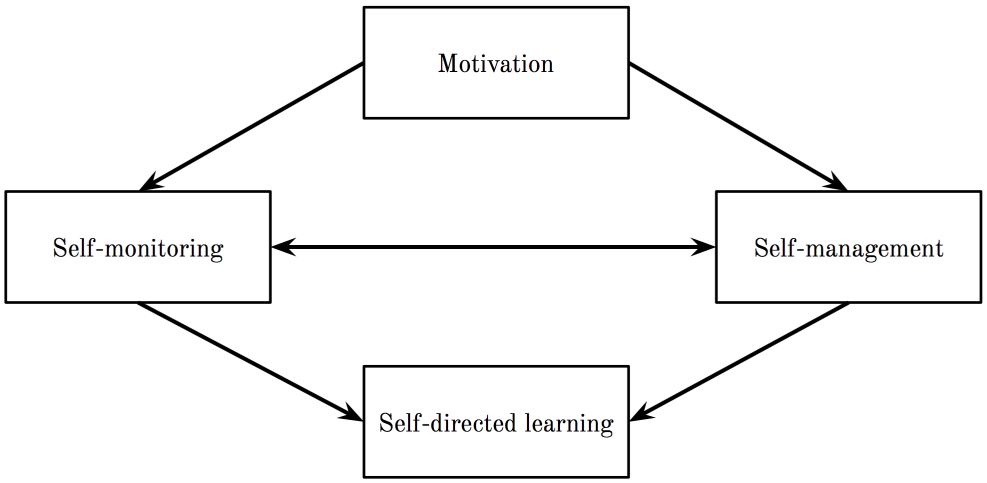

Figure 1: Garrison's model of self-directed learning (Garrison, 1997)

This model highlights the learner's role in self-directed learning in contrast with the more traditional teacher-lead methods of pedagogy. However, it is important to note that self-directed learning does not mean learning in isolation. Rather, self-directed learning can happen in social contexts and actually often does (Ellinger, 2004). The social context for learning can be argued to be especially important for work related self-directed learning, as the motivation for learning often arises from common goals of the organisation and individual (Confessore, 1997).

2.1.2 The self-directed learning process

Moving from the general model of self-directed learning outlined above to the process of self-directed learning, there are again several different definitions (e.g., Tough, 1967; Knowles, 1975; Hammond & Collins, 1991). The very early definition of the process outlined by Knowles in his 1975 book is still a useful model for reasoning about the process. It is simpler than many other processes proposed in literature but others tend to include at least the parts mentioned by Knowles (1975). Instead of omitting any parts, researchers tend to expand the model to either cover more ground or divide some parts into multiple more specific ones. This model was chosen for analysis as application in organisations can be expected to be easier with a simpler model.

Knowles (1975) described a linear process of learning consisting of six steps: climate setting, diagnosing learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes. This model is visualised in figure 2.

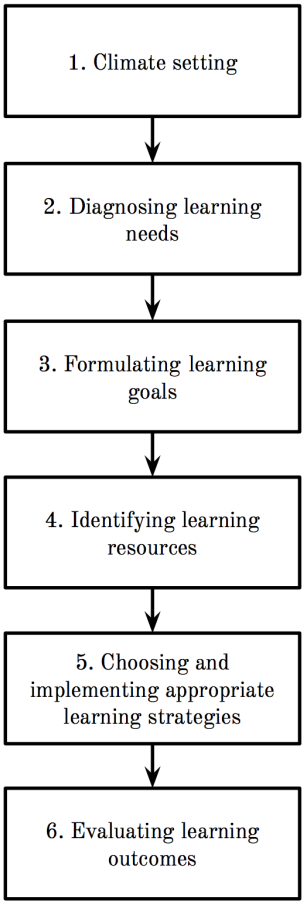

Figure 2: The self-directed learning process (Knowles, 1975)

The first part of the process, climate setting, refers to creating an environment supportive for learning by, for example, supporting risk-taking and toleration errors (Confessore & Kops, 1998). This happens mostly outside of the sphere of influence of an individual and relates to the learning organisation and organisational culture. From the point of view of the learner, the process really starts with diagnosing learning needs: defining what needs to be learned. The needs are the basis for formulating specific learning goals. Having defined learning goals, the learner identifies the resources, human and material, required to reach those goals. With these resources the learner is able to formulate a strategy for reaching the goals and then implement the strategy. Finally, the learner evaluates the outcomes: Did I reach the goals I set out and what did I learn?

The process outlined above appears to be a very neat linear progression from a plan to eventual learning and evaluation. However, the learning process is typically

not as linear as depicted here (Spear & Mocker, 1984). Often the process is closer to one of concentric loops: implementing learning strategies leads to a realisation that the goals or resources chosen were faulty requiring returning to an earlier step, or evaluating learning outcomes leads back to setting new goals as outcomes were not what was expected. Moreover, learners may not even consciously consider all of the steps and jump between them constantly. This linear process is still a helpful tool in diagnosing potential problems in how organisations support self-directed learning as long as the limitations are kept in mind.

2.1.3 Effective self-directed learning

The effectiveness of self-directed learning should be considered at two distinct levels: the individual learner and the organisation. This split is useful tool as individuals are able to affect the former by themselves and organisational changes are required for the latter, and the literature on the topic is split among similar lines. A considerable body of research on the individual level is naturally the adult education literature, extending also to the relationship between the learner and the teacher. The organisational level is covered more widely by the human resources development and organisational learning literature.

At the individual level, effectiveness can be considered along the four parts of the Garrison model of self-directed learning outlined earlier: motivation, self-monitoring, self-management and self-directed learning itself (Garrison, 1997). From the point of view of effectiveness, these can grouped into two groups: First, motivation to learn by itself, and second the individual capabilities for self-monitoring, self-management and self-directed learning, together known as readiness for self-directed learning.

Starting with motivation for learning, while learning can happen with little motivation, it has been identified as a core part of the process both as the reason for learning and for keeping on the task. Garrison (1997) argues that "motivation reflects perceived value and anticipated success of learning goals at the time learning is initiated and mediates between context and cognition during the learning process". Motivation has also been seen as especially important in self-directed learning (Grow, 1991). Entering motivation, being the driver for even starting learning, is a necessary precondition but task motivation is where differences in motivation more clearly affect effectiveness. Increased task motivation leads to faster learning by, for example, more focused approach (Knowles, 1975) and to a more self-directed process (Grow, 1991).

The other group of factors for individual effectiveness is the readiness for self-directed learning. This itself is a huge topic and includes skills such as resource seeking, goal setting and reflection. A detailed discussion can be found for example in Guglielmino (1978) introduction to the self-directed learning readiness scale. However, several simplified models have been proposed and one often used straightforward framework for discussing the overall readiness of individuals for self-directed learning is the Staged Self-Directed Learning model outlined in Grow (1991). The model divides the readiness of learners into four distinct stages encompassing a variety of characteristics progressing towards full self-directedness. Table 1 describes the

four stages of the Staged Self-Directed Learning model and the roles of student and teacher at each level.

Table 1: The Staged Self-Directed Learning model (Grow, 1991)

Stage	**Description**	**Student**	**Teacher**	**Effective practices**
Low self-direction	Learners need a teacher giving them explicit direction on what, when and how to learn.	Dependent	Coach	Informational lectures and coaching with immediate feedback.
Moderate self-direction	Active learners who still require a sense of external direction and lack in subject matter knowledge.	Interested	Guide	Goal setting and learning strategies.
Intermediate self-direction	Learners who are able to effectively explore on their own. Teacher can take a less directing role.	Involved	Facilitator	Facilitated discussions and project work.
High self-direction	Learners setting and achieving their own goals. Seeking support proactively when required.	Self-directed	Consultant	Individual and self-directed group studying.

The readiness for self-directed learning should be considered to be partly context specific and partly a generalised skill applicable to different contexts (Grow, 1991). Take as an example freshly graduated computer science student. They might be generally fairly proficient self-directed learners and at stage four in the context of computer science. At the same time, they are likely at a lower one in the context of, for example, management skills.

The Staged Self-Directed Learning model was developed in the context of university courses (Grow, 1991) and thus focuses on the interaction between student and teacher and how this is different between the stages. Thus it also described the type of teacher that is most effective at each stage of learning and what kind of teaching practices have been found to be effective at each level by Grow (1991). These offer an useful description of what level of instruction learners require at the level and how that could be provided. While the classroom context is not directly applicable to

learning in organisations, the model offers an useful framework for reasoning about the type and kind of support learners might require in different stages also in the workplace.

As self-directed learning is driven by the individual, at the organisational level effectiveness is about support. How is the organisation able to support the learning of its members. As mentioned, learners are at different stages in different topics. This means that different people need differing levels of support also at the organisational level and will probably need differing levels of support in different areas. Matching methods of support to employee readiness naturally is not the only supporting practice identified. Five key organisational factors for supporting self-directed learning were identified by Confessore and Kops (1998) in their review:

1. Tolerance for errors, support of experimentation and risk taking and an emphasis on creativity and innovation
2. Use of a participative leadership style and delegation of responsibility to organisational members
3. Support for learning initiatives that are linked to the organisations goals and values
4. Encouragement of open communication and of information systems that provide for collaboration and teamwork and that use both internal and external learning resources
5. Provision of opportunities and situations for individual learning

Considering these factors, we can see that they are firstly about offering learning opportunities to individuals, either in terms of explicit opportunities (point 5) or as delegation of responsibilities (point 2). And secondly about allowing these to be utilised effectively by opening up communication (point 4), not punishing failures (point 1) and offering explicit support (point 3).

2.2 Self-managing organisations

2.2.1 Self-management as an organisational structure

Traditional organisational structure is built around two concepts: the grouping of people into interrelated teams and the formal authority and hierarchy of these groups established through the manager-subordinate reporting relationship (Mintzberg, 1979). These two concepts then structure the coordination of work in organisations (Mintzberg, 1979). Self-managed organisations, and other types of less hierarchical organisational structures, reject the hierarchical structure as a necessity and instead focus on decentralising formal authority within the organisation (Lee & Edmondson, 2017). In other words, employees are empowered to make the decisions on the manner and type of work performed, without managers having the right to override these decisions simply based on formal authority. This has been formalised as three

characteristics of self-managed organisations: decentralised authority, a formal system of decentralisation and organisation-wide adaptation (Lee & Edmondson, 2017).

The defining characteristic of self-managed organisations is nevertheless the decentralisation of authority. In practice this means distributing the decision-making authority traditionally held by managers across the organisation (Lee & Edmondson, 2017). The way authority is decentralised varies between organisations in terms of the type of decisions decentralised and the extent to which those decisions are decentralised. The general idea is, still, that the role of a manager is disbanded, and the managerial tasks are distributed among the other members of the organisation.

Second, the decentralised authority should be codified in a formal system in the organisation (Lee & Edmondson, 2017), as failing to do so tends to lead to informal power structures and hierarchy and thus eventually to an organisation that is anything but self-managing. This challenge was already highlighted in 1972 by Jo Freeman in the context of the formal hierarchy shunning of women's liberation movement (Freeman, 1972), a topic that has since received considerable academic interest (e.g., Gruenfeld & Tiedens, 2010; Pfeffer, 2013). A formal system of decentralisation avoids the informal hierarchies by, for example, specifying decision-making structures, the division of responsibilities in the organisation or the processes for achieving change, instead of assuming they will emerge spontaneously.

Third, for an organisation to be considered self-managed, self-management should be organisation wide (Lee & Edmondson, 2017). It is one thing for hierarchical organisations to have individual self-managed teams but another matter entirely for the whole organisation to be self-managed. In general, the presence of self-managed teams within an otherwise hierarchical organisation leads to a model where it is mostly tasks related to work execution and monitoring that function without managerial oversight. By contrast, higher level tasks, such as organisation design, are still managed by the rest of the hierarchical organisation, as those tasks are rarely performed in individual teams. However, even in a highly self-managed organisation, decentralisation does not signify democracy, or that each employee has an equal say in every matter. Instead, decision-making authority can be formalised in roles and processes, such as contracts between people (Gino et al., 2013), temporary team leads (Bernstein et al., 2014) or in mini-roles as in Holacracy (Anderson, 2019),

While the focus of this thesis is self-managed organisations, it is important to note that they are not the only type of less hierarchical organisation recognized in academic discourse. For example, Lee and Edmondson (2017) identify three other such categories: post-bureaucratic organisations, humanistic management and organisational democracy. All three share similarities with self-managed organisations but fail to fulfil at least one of the three characteristics outlined earlier. Organisations in the first category, post-bureaucratic, tend to see the lesser hierarchy as a way to achieve responsiveness and flexibility as a way to answer rapidly changing needs created by the business environment. The second category, humanistic management, is based on the idea that employees are intrinsically motivated to perform well at work in contrast with the classical theories of scientific management, where the assumption is that extrinsic motivation is crucial for increased performance. The third category, organisational democracies, differs quite markedly from the earlier two;

these organisations aim for democratic decision-making throughout the organisation, often historically as a way to address labour-management tensions in manufacturing (Lee & Edmondson, 2017).

Finally, the agile organisation is yet another type of organisation with less hierarchy than traditional organisations (Anderson, 2019). The structure of agile organisation is described by Kotter (2014) as a "dual operating system" where alongside a traditional hierarchical organisation, which is focused on incrementally improving the current business, there exists a separate network that enhances the organisation through lateral communication and lack of hierarchy (Kotter, 2014). Agile organisations give more freedom to employees compared to more traditional organisational structures and indeed often have self-managed teams that are able to govern their own work (Kotter, 2014). However, they lack the organisation-wide adoption of decentralised authority central to self-managed organisations.

2.2.2 Self-managing organisations in practice

The implemented practices, and even the definition, of self-management vary considerably across organisations (Anderson, 2019). For example, the extent of self-management varies from individual employees and teams having wider than typical latitude for making decisions to every single employee being expected to function with minimal managerial oversight. On this spectrum, much of the research on self-management focuses on self-management of individuals and that of individual work teams (Anderson, 2019). Less has been written on the practices of organisations that have adopted self-management throughout their organisation, with the paper by Lee and Edmondson (2017) being one of the few more comprehensive takes on the topic.

Self-managing teams are usually created around fairly comprehensive tasks and are typically given considerable freedom in achieving those (Manz, Keating, & Donnellon, 1990). They are identified to be challenging for existing organisations due to requiring new models of management (Manz & Sims Jr, 1987) and at the same time case studies such as Semler (1989) promise considerable benefits for successful adoption. At simplest, self-managing teams are given a task and instructed to execute it the way they see fit. While accommodating individual self-managing does require some organisational changes, this contained nature makes them potentially fit quite nicely into an existing organisational hierarchy. Manz and Sims Jr (1987) even describe how to effectively lead these teams from the outside.

While work being organised in self-managed teams does bring forth some of the considerations related to self-managing organisations, it is still limited to individual teams. Thus it lacks in one of the key criteria of self-managing organisations: self-management should be organisation wide and not limited to individual teams. This radical reorganisation requires very different thinking than the individual self-managing teams. The degree of self-management in organisations can be seen to progress through a spectrum from very hierarchical organisations, through organisations with self-managing teams and all the way to different kinds of largely self-managing organisations.

Naturally, there is no single dividing line as to when an organisation is self-managing and when it is not. A practical way of considering the degree of self-management within an organisation is to look at how many functions usually held by managers are decentralised (Lee & Edmondson, 2017). These dimensions are listed in table 2 in order of likelihood of decentralisation, according to Lee and Edmondson (2017). However, even though they are listed in general order of likelihood, an organisation does not necessarily move the areas into self-managing in this order.

Table 2: Areas of managerial authority (Adapted from Lee & Edmondson, 2017)

Area	**Description**
Work execution	The way employees perform their individual tasks.
Managing and monitoring work	Work timelines and quality.
Organisation and work design	How the organisation as a whole is structured. What roles exist in the company and what are their responsibilities.
Work and resource allocation	What work needs to be performed and who should work on what.
Personnel and performance management	Recruiting and discharging employees. Employee training and evaluation.
Firm strategy	Organisation's longer term goals and direction. Market level decisions.

Considering an organisation with self-managing teams through these dimensions, we can see that typically work execution and managing and monitoring work are delegated to the teams. Personnel and performance management is sometimes delegated to them (e.g., Barker, 2001). Work and resource allocation is usually left to them at the level of the team, but organisation maintains some authority on these decisions. Firm strategy, organisation and work design are usually left fully to the organisation instead of individual teams (Anderson, 2019).

The increase in the degree of self-management can progress through many different paths. For example, teams can be given wider latitude on deciding what they should be working on, such as at the software company Valve (Bernstein et al., 2014) where teams and individuals are completely free to choose what project they work on, or the overall tasks required can stay relatively similar, but with each team having complete freedom on work design and personnel management such as at the Dutch health care company Buurtzorg (De Veer, Brandt, Schellevis, & Francke, 2008). It is important to note that these paths lead to different kinds of organisations, even when all are self-managing in their own way and thus care must be taken when applying findings from one to others.

As self-management means decentralisation of decision-making, it clearly enforces new requirements for employees if they are to perform successfully. Depending on the degree and kind of self-management, employees need better skills in areas such as decision-making, self-management, communication and teamwork. Employees also

need a more comprehensive understanding of how the organisation functions and its overall goals (Anderson, 2019) as a basis for their decision-making. These in turn create new demands for training, learning and hiring that need to be considered by such organisations.

While self-managing organisations have been receiving acclaim in literature and in the mass media, there has also been considerable criticism of self-management as an organisational structure. Some areas that have been identified as problematic include potentially lowered efficiency, increased employee stress and imprecise definitions of what precisely is self-management (Lee & Edmondson, 2017). As a concrete example, Barker (2001) discusses how one instance of self-managing teams in manufacturing lead to increase in work-related stress in employees. Challenges in maintaining self-management as an organisation grows and conflicts arise have also received interest (Edmondson & Smith, 2006).

2.2.3 Employee learning in self-managing organisations

Organisational structure has been identified to have a considerable effect on employee learning (Confessore & Kops, 1998; Sitar & Škerlavaj, 2018; Bresman & Zellmer-Bruhn, 2013). Different structures have been found to support different types of learning both at the organisational (Sitar & Škerlavaj, 2018) and team levels (Bunderson & Boumgarden, 2010). Especially at the team level, self-management has been found to encourage more exploratory learning (Sitar, Pahor, & Škerlavaj, 2018), and knowledge creation and sharing (Foss, Minbaeva, Pedersen, & Reinholt, 2009). Similarly, varying organisational practices have been identified to be shown effective for supporting employee self-directed learning (Rana, Ardichvili, & Polesello, 2016).

Sitar and Škerlavaj (2018) proposed three areas of learning where managers should consider the effect of organisational structure: knowledge sourcing, learning style and single versus double-loop learning. An experimental follow-up found that learners in hierarchical organisations favoured independent and single-loop learning, while learners in more organic structures favour external sources and double-loop learning (Sitar et al., 2018). They also hypothesised learners in hierarchical organisations to favour internal learning, and learners in organic organisations favour a collaborative learning style but these could not be concluded. As these have also been found to be related at least in some studies (Burns & Stalker, 1961; Chen & Huang, 2007), further explanations should be explored.

Similarly, Bresman and Zellmer-Bruhn (2013) found that increasing amount of structure in an organisation was associated with less learning in self-managing teams. However, they also noted that increasing structure within a team was related to more learning. They proposed that lower task autonomy associated with higher organisational structure hinders learning, and that psychological safety related to more team level structure leads to more learning Bresman and Zellmer-Bruhn (2013). Task autonomy has been identified to also encourage knowledge sharing (Foss et al., 2009), potentially decreasing learning opportunities.

However at the same time self-managing teams have been identified to some-

times lead to poor coordination, suboptimal resource use and employee frustration (Bunderson & Boumgarden, 2010). Bunderson and Boumgarden (2010) noted that in teams with a stable variety of tasks to perform increased structure create a safe environment fostering learning and improvement. This would suggest that organisations should consider the type of work performed by individual teams and build the structure around that in order to support learning effectively. Teams facing novel situations often should have limited structure, while teams with more repetitive work should have more specialised roles and hierarchy.

Organisations need to be careful to mitigate these challenges and make an effort learn from any trials they do. Therefore, it seems critical that organisations practicing self-management should ensure that decentralisation of authority does not at the same time erase all capabilities for organisational learning. Self-managing organisations can be expected to be effective in learning in uncertain environments and more hierarchical organisations in clearer ones (Romme, 1996).

In relation to self-directed learning, organisational structure can be expected to have a considerable effect on the support provided by the organisation. Smith, Sadler-Smith, Robertson, and Wakefield (2007) argue that there should be structures, policies, incentives and practices for specifically supporting self-directed learning. Managers need to be developed to value and support self-directed learning and support should take into account the varying degrees of self-directedness that employees have (Smith et al., 2007). As a concrete example, organisation could offer expert resources who are able to support the learner in identifying the options available and help in judging their relative merits (Confessore, 1997).

Furthermore, when learning in an organisation, the purpose for self-directed learning often at least partially comes from the organisation (Confessore, 1997); it is the constraints and opportunities afforded by the organisation that establish the learning situation (Spear & Mocker, 1984). Therefore, the practices and processes organisations have surrounding learning have a significant impact on the self-directed learning of employees. Rana et al. (2016) list organisational practices that should be considered in order to support self-directed learning in a learning organisation:

1. Building and communicating a shared vision to employees at all levels
2. Fostering collaboration, interaction and teamwork
3. Empowering employees through participatory work practices
4. Encouraging and providing opportunities for continuous learning
5. Using relevant technologies in the workplace

Contrasting these with the key organisational factors for supporting self-directed learning generally listed in section 2.1.3, similar practices can be identified in creating opportunities for learning, shared or decentralised leadership and having a culture of collaboration and teamwork. Separately, Rana et al. (2016) highlight the importance of shared vision and Confessore and Kops (1998) emphasise a culture of experimentation. Out of these proposed practices, self-managing organisations by

definition delegate responsibility, but the rest of the practices require making explicit choices and implementation by the organisation.

Taken together, implementing these practices requires a considerable amount of effort across an organisation. Indeed, Smith et al. (2007) note that these are typically lacking organisations and that feasibility of implementation, as considered by organisational leadership, varies widely. Self-managing organisations specifically are in an interesting situation for making these choices, as the question of who should be responsible for these significant choices might a fairly difficult one to answer. Finally, self-managing organisations should have a plan for ensuring knowledge sharing and organisational learning, as they lack the one afforded by the hierarchical organisation.

3 Methodology

3.1 Research approach

The research approach for this thesis was a qualitative single-case study. The primary method of data collection was interviews with case company employees, whereas secondary data was collected from the case company's internal documents. An abductive approach was used for the iterative data analysis, with systematic combining (Dubois & Gadde, 2002) being the specific process. This overall research approach is visualised in figure 3. The process started with preliminary interviews of case company management and the thesis advisor, and an initial literature review to define the research problem and focus (1-2). This was followed by an three-step iterative part of interviews, analysis and refining of the models (3-5). After the final iteration of the loop the final results were documented and evaluated (6). The approach is explained in more detailed in section 3.4 with data analysis.

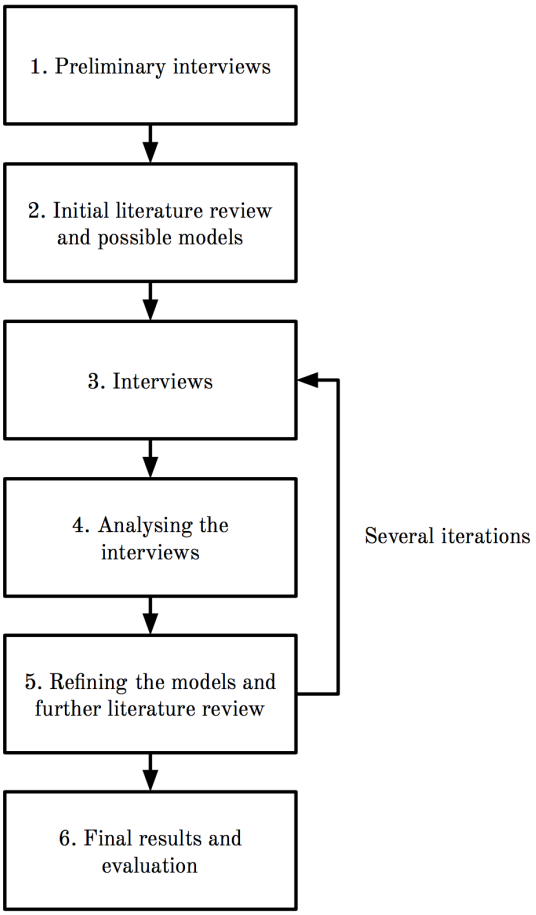

Figure 3: Research approach.

A case study was chosen as the primary approach, as one of the main objectives of the study is to improve the case company's operating practices. Case studies are apt in this context because, as Eisenhardt highlights they represent "a research

strategy which focuses on understanding the dynamics present within single settings" (Eisenhardt, 1989). At the same time, case studies can act as a basis for generalising into more comprehensive theories (Yin, 2014). Thus the case study represents a natural approach to achieving the research objective.

Moreover, a single-case approach was selected in preference to a broader multi-case study that would lead to better generalisability to allow for in-depth study of processes and potential improvements in the case company. A single case study allowed for much deeper analysis of the context of the case company and individual employees when a multi-case study would necessarily be a much shallower look into some part of the field. Additional research as a multi-case study considering several different organisations would be helpful, however, to validate the findings.

Even though a case study is a good fit for the research objectives, other challenges nonetheless exist alongside the lack of generalisability. These challenges include lack of advantages over other methods and a perceived lack of rigour and level of effort required (Eisenhardt, 1989). However, according to Yin, the latter two criticisms can be tackled by providing clear documentation of how data collection and analysis were performed (Eisenhardt, 1989). Ketokivi and Choi (2014) also highlight the perceived lack of rigour and argue that lack of transparency in research processes is the main cause. To this end, a clear outline of the analysis performed is included in section 3.4.

3.2 Data collection

The primary method for empirical data collection was semi-structured interviews with the case company employees. Interviews were chosen as the primary data collection method for several reasons: First, they generally allow for deeper answers than other comparative methods; second, they facilitate the setting of topics in a larger context, and third, the interviewees themselves are seen as active, meaning creating, participants in the method (Hirsjärvi & Hurme, 2008). Semi-structured interviews, instead of a more structured approach, were used for a similar reason: they allow interviewees to discuss topics that interest them more deeply while still providing relevant data (Hirsjärvi & Hurme, 2008). Online surveys for the employees were also considered as a secondary method but were dropped as the additional information that could be gained through them was deemed low, considering that a representative and large selection of the company employees were interviewed.

Theme interviews as outlined by Hirsjärvi and Hurme (2008) were selected as the concrete interview method. They differ from typical semi-structured interviews by providing structure with larger themes during the interviews as opposed to on one hand more fleshed out questions in some formats of semi-structured interviews, and on the other hand the much more complete lack of direction in unstructured interviews. Using theme interviews allows the researcher to better tailor the questions to individual interviewees, as only the themes are expected to stay the same across interviewees (Hirsjärvi & Hurme, 2008).

With the strengths of interviewing come also challenges and concerns. An important one is that interviews are verbal reports and reflections by individuals

with the associated challenges, including inaccurate recall, and biases in their own representation (Vuori, 2017; Yin, 2014). Hirsjärvi and Hurme (2008) also highlight several potential pitfalls for researchers: sources of bias caused by interviewer actions, e.g. leading questions, informal data leading to challenges in rigorous data analysis and reporting, and challenges in generalisability. Less structured and less standardised data, challenges in validity and generalisability are also highlighted by Vuori (2017). Most of the challenges highlighted are linked to the analysis phase and can mitigated by taking care in the analysis of the data. These mitigating methods are discussed in more detail as a part of the data analysis. During interviews, care was taken to follow good interview practices outlined by Hirsjärvi and Hurme (2008).

The interview themes were based on existing research around the topic and preliminary discussions with case company management. Even with the interviews being theme interviews, guiding questions were written to provide structure when necessary. However, all questions were not asked from all participants. Three main themes were selected: personal self-directed learning, learning in projects and wider organisational support for learning. These were further divided into sub-themes and individual questions for structuring the interviews. While the same themes were discussed with all interviewee groups, management focused more on the organisational processes, and junior and senior consultants discussed more their personal experiences. Alongside these themes, background information was collected at the start of the interview to deepen the analysis.

The themes were organised as levels of learning and discussed in order of increasing scope. This allowed the participants to easily discuss the different areas and to draw connections to more personal topics when discussing the wider themes later. The first theme, personal self-directed learning, was used to cover individual perception and practices of learning. The second, learning in projects, covered an area that had been identified as a primary learning opportunity by preliminary interviews. The third, organisational support, was the largest, including areas from organisational culture to learning opportunities. It formed the basis of analysis for the perception and expectations of support from the organisation. The themes and interview questions are included as appendix A.

Interviews were performed in Finnish or English, depending on the preference of the interviewee and were later translated to English for data analysis. Average duration of an interview was approximately 70 minutes with shortest being 50 minutes and longest 85 minutes.

Alongside the primary data source of interviews, document analysis was used as a secondary source. These were company documents analysed to provide wider context to the study, and organisational practices and structure of the case company. A list of the documents analysed is included as appendix B.

3.3 Interviewees

Eleven employees of Columbia Road were interviewed for the thesis. The interviewees were divided into three groups: junior consultants, senior consultants and company management. Division into junior and senior consultants was based on company titles

that were in turn based on range of responsibility. Junior consultants were mostly responsible for their individual work and possibly leading smaller projects, while senior consultants usually had a leading role in project teams or more extensive company level responsibilities. While the company employs a wider variety of technical fields, both groups of consultants consisted only of software developers, as the focus of the thesis was on them.

The first group interviewed was four junior consultants. Their professional experience varied from a couple of months to a maximum of three years. Specific junior consultants were selected to cover a variety of project types and professional situations: one was a part-time student and others were full time employees, and typical project lengths varied from short ones of weeks to several months. All had university education in information technology, computer science or a similar field, or were currently pursuing one.

Second group consisted of three senior consultants. They had more than five years of professional experience and university education in information technology or computer science. Alongside software development experience all had also prior experience working specifically in the field of digital sales.

The third group, company management consisted of three people: one of the founders, the head of professional development and the head of human resources. All of them had been with the company for at least three years and had more than a decade years of professional experience in their fields.

The management members were selected to cover the different areas often identified in literature affecting employee learning: founder as top management and human resources and professional development as directly relevant organisational functions. Overall, consultants with a wide range of responsibilities and professional experience were selected in order to gain an understanding of their experience to perception of learning.

3.4 Data analysis

Data analysis was based on the systematic combining approach outlined in Dubois and Gadde (2002). Systematic combining is a an analysis process for case studies where case analysis, theoretical framework and empirical study all progress at the same time (Dubois & Gadde, 2002). This is in contrast with a more traditional approach to case studies which progresses linearly from a phase to another (Dubois & Gadde, 2002). The key differentiator of systematic combining is going back and forth between theory and the case under analysis. This allows richer analysis and is closer to what many researchers do even when claiming a more linear process (Dubois & Gadde, 2014).

In practice, Dubois and Gadde (2002) describe the systematic combining as going back and forth between empirical observations and theory by two processes: matching, and direction and redirection. Matching is the process of collecting empirical data, analysing it and relating it to the current theoretical framework and seeing how they fit together. Direction and redirection are the processes of moving further data collection, analysis and theory exploration towards avenues indicated by past findings

in each. While the process is simple, it offers a practical and explicit, if not simple, way of researching organisational practices.

As outlined in figure 3, the analysis process consisted of three-step iterative process of data collection in interviews, analysing the data and reflecting those results on literature, and then repeating the whole process. Some redirection of the interview questions was done based on initial interviews and the following literature review. The interview questions in appendix A include the questions prepared for the final interviews. Analysis was based primarily on searching interview recordings and interview notes to identify common sentiments and statements, and grouping those in order to find larger themes. These sentiments, statements and themes were then considered in light of existing theory and earlier models that had emerged. The results of analysis directed further literature review and understanding from there was again used to redirect further interviews and analysis.

Alongside this more general thematic analysis, a model of learning needs was developed in collaboration with interviewees. Initially, the model arose from the first two interviews and consisted only of two parts: competence area and soft skills. Competence area is a case company term for the primary field a consultant works in, tech, design, marketing technology or strategy, and contained knowledge and skills relevant to working in that. Everything else was initially grouped into soft skills. This division was quickly deemed too simplistic when matching between interviewees and to existing literature. Thus after two more interviews, by refining the categories together with the interviewees, the model was expanded to include two more categories: client domain knowledge and consulting business. This version proved to be more helpful in clarifying interviewees learning needs and with slight renaming of the categories lead to the final model in figure 3.

Document analysis was cursory and was primarily used to identify formalised learning opportunities and descriptions of self-management and learning practices and organisational culture.

3.5 Case description

The case company, Columbia Road is a consulting company founded in early 2016 as a part of Futurice Group. It provides professional services in areas related to digital sales and marketing. These services are offered as four main areas: software development, strategy work, design and marketing technology. At the time of the study the Columbia Road has approximately 70 employees and has been growing constantly. The company is based in Helsinki and has an office also in Stockholm. The case study was performed between March and May 2019.

The work performed by the consultants varies considerably, but a typical project among the interviewees was identified to be design and implementation work for an online ecommerce store. These are mostly software development projects consisting of everything from user-interface design and architecture design, to software development and release management. In addition to the implementation work, projects often included the introduction of new organisational practices, such as ways of working or project management, to the client organisation.

Most of the work was conducted in small self-managing teams of usually one to four consultants. The consultants are drawn from varying competence areas that are organised according to the four offerings: software development, strategy, design and marketing technology. Teams and individuals on projects are given considerable freedom to direct their own work with no direct, constant oversight from the outside. Alongside the consulting teams, there are employees working on sales, human resources and business development.

Decision-making in Columbia Road is built around three principles: trust, decentralisation and transparency. Employees are trusted to make the best decisions, decisions should be made by everyone in the organisation and they should be visible to everyone. As an example of this, all full-time employees are given company credit cards. Thus the basis for making decisions is that each employee should be empowered to make the decisions necessary for performing their work without waiting for managerial approval. To support this format of decision-making, a framework known as 3x2, "three times two", has been created by the parent company, Futurice.

The 3x2 framework is a simple advice process built around the idea that when one is making decisions, they should consider them across three times two aspects: people, customers and numbers; now and in future. Thus the primary question employees need to answer becomes: Do the probable results of a decision appear positive, or at least neutral, in all of these aspects? Or in other words, does this benefit company employees, the customers we are consulting and our numbers, costs and revenues, and what is the effect now and in the future? (Heiskanen et al., 2018). Internally at the company, the picture in figure 4 is used to depict this idea.

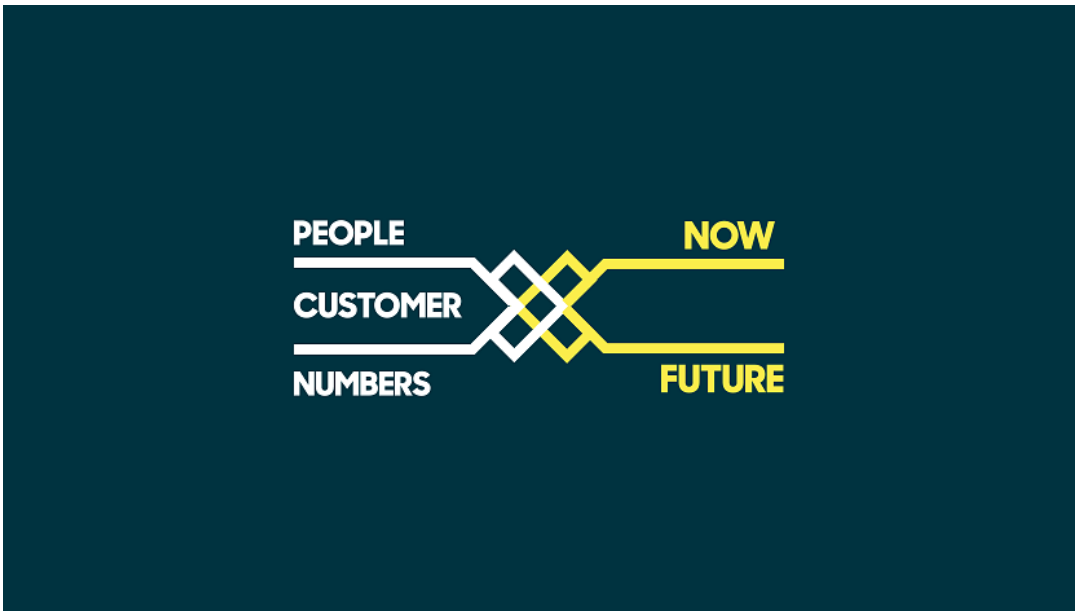

Figure 4: The 3x2 framework. (Heiskanen et al., 2018)

As a final note, the author has been employed at the case company for three years and continues work there during the study. Author primarily works as a

software development consultant but is involved in improving employee professional development and learning.

4 Results

This chapter presents the results of the data analysis. It is divided into three sections according to primary themes discovered during data analysis. The first section gives an overview of the learning context in consulting and the case organisation. The second explores the findings on self-directed learning in a self-managing organisation. The third section summarises the key organisational practices identified to affect self-directed learning in a self-managing consultancy.

4.1 Learning in software consulting

4.1.1 Learning needs

Throughout the interviews it became apparent that the interviewees approach the learning of different topics very differently. One junior consultant framed this as: "I have clear learning goals for new technologies and I'm progressing towards them well. But I don't even know where I should start with, for example, having better meetings". Interviewees also mentioned differing readiness for self-directed learning and methods of learning for different topics. This lead to forming of a model for different learning needs for software consulting in order to compare the approaches to learning between them.

The model for learning needs consists of four distinct components: *substance knowledge, professional skills, domain knowledge and consulting business knowledge*. Domain knowledge is further divided into the more general *industry-wide knowledge* and the narrower *client-specific knowledge*. The model is depicted in figure 5. The model was discussed with all interviewees and later interviewees often did not identify all parts by themselves but when showed the model, did consider it to be valid for their use.

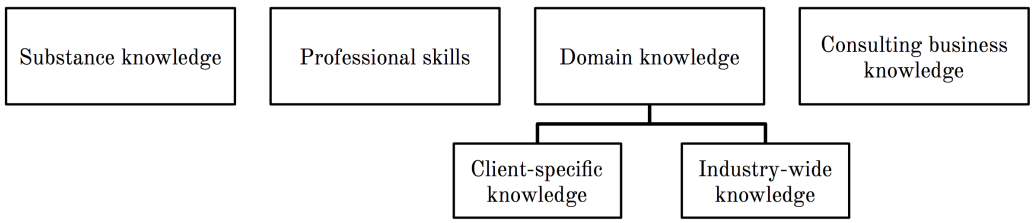

Figure 5: Learning needs.

The first component of the model is *substance knowledge*. This is the core benefit a consultant brings to the client. For software developers it is the technological

knowledge required to create software such as programming languages, software frameworks and design patterns, and understanding software development processes such as agile and methods for software design. Substance knowledge is primarily about the understanding and knowledge required to solve the specific problems a consultant's client has.

The second components is *professional skills*. This is the broadest category that differs considerably between people. It includes on one hand the typical consulting skills such as trust building and problem solving skills, and on the other hand more generic skills such as leadership, mentoring, meeting organisation and prioritisation skills. These are characteristically not explicit knowledge that is easy to share, but instead implicit patterns of behavior and skills.

The third component, *domain knowledge*, is the understanding of the problem area and business context the company functions in. It was further split into two distinct areas: *Industry-wide domain knowledge* and *client-specific domain knowledge*. Industry-wide knowledge is concerned with questions such as how the industry as a whole works, what are the common business models and what are the big players. In the case company this industry was seen to be digital commerce as a whole. This is knowledge that could be shared relatively easily within the organisation and is fairly generalisable across projects. The second type is client-specific domain knowledge, covering topics such as: what are the individual clients business processes, what is their competitive edge and what systems they are using.

The final component is *consulting business knowledge*. It includes how the consulting firm itself functions and generates profit, what are the internal processes and what drives business, how work allocation functions and how decisions are made. Understanding of the consulting business was identified to be important for ensuring that employees make decisions that are beneficial for the company in a self-managing organisation. Several interviewees noted that in a more hierarchical organisation there is less need for junior consultants to understand these as their manager would be there to consider these areas for them, but the self-managing structure of the case company makes this crucial knowledge for everyone.

With regard to self-directed learning, the most significant finding was that interviewees learning approaches varied considerably between the learning needs. The learning approaches varied on several dimensions, but three could be seen in all areas: time spent for learning, methods of learning, and readiness for self-directed learning. First, most interviewees focused their time on substance knowledge. There was also a clear connection to seniority: the more senior a consultant was, the more they spent on learning areas other than just substance knowledge. Junior consultants even sometimes did not consider learning to include these other areas unless asked about them. For methods of learning, individual learning through internet sources dominated for substance knowledge and in other areas informal knowledge sharing was most important, with internet being a secondary source. Finally, most interviewees, especially juniors, were far more capable in learning on their own in their substance area compared to the other learning needs. This is quite logical but highlights that providing support in the other areas is probably necessary even if it might not be in the substance area.

Table 3 displays differences that were noted between the learning areas on three significant dimensions: time spent for learning, methods of learning, and perceived individual readiness for self-directedness.

Table 3: Differences noted between learning areas

	Substance knowledge	**Professional skills**	**Domain knowledge**	**Consulting business**
Time spent for learning	**Juniors:** Almost all explicit learning time spent here. **Seniors:** For most still a considerable part of the time but far less than juniors.	**Juniors:** Little spent on formal learning, some on informal learning. **Seniors:** Varied across interviewees but all had more focus than juniors.	**Juniors:** Little to none on industry-wide and little on client-specific. **Seniors:** Varied. One interviewee identified client knowledge as their focus while for others it was secondary.	Both groups identified this as mostly informal learning happening alongside work.
Primary methods of learning	Project work. Independent studying.	Informal learning. Project work.	Informal learning. Project work.	Informal learning.
Perceived readiness for self-directedness	All interviewees felt comfortable in self-directed learning. Juniors did still expect mentoring and validation.	Varied considerably person to person. Some correlation with seniority. Lowest perceived readiness out of the four needs.	Many had not really considered spending time learning about the industry domain. Seen as a relatively straightforward topic.	Varies considerably from person to person. Mostly related if they had earlier experience in consulting.

Finally, it should be noted that the model is not comprehensive and requires further refining. Interviewees noted several important considerations such as: should project management be separate, where are sales skills and does this have too little focus on leadership? At the same time they highlighted that formalising a model such as this in an organisation might lead to people prioritising these over areas that are not made explicit by this division. This was based on the notion that if a division of learning needs exist, it will be assumed to contain all necessary areas, and conversely that if one has not been defined, learners need to define them based on

what they actually need to learn.

4.1.2 Learning opportunities

The learning opportunities identified in the case company were divided into two categories: formalised and informal learning opportunities. The formalised learning opportunities were defined as ones that were identified during the document analysis as formally defined events or practices. Informal learning opportunities were defined as the other opportunities mentioned during interviews as utilised. Table 4 lists the formalised and table 5 the informal opportunities with short descriptions of each.

Table 4: Formalised learning opportunities

Opportunity	**Description**
Checkpoints	Case company's version of the once a year performance review. Biggest differences being that they held approximately four times a year with agenda being decided by the employee, usually focusing on professional development with no focus on performance appraisal. Each employees is responsible for booking their own checkpoints with anyone in the company who they feel would be helpful in their current situation. Alongside the informal agenda, employees are supposed ask for feedback from everyone they are working with currently.
Lessons learned	Once a month free-form presentations for sharing new things learned during client projects.
Futurice Group learning festival	Once a month Futurice Group wide learning event consisting of presentations on varying topics from client cases to new technologies.
Possibility to attend conferences	Employees have permission to use company time and money for attending conferences. An attendance count between zero and two times per year was mentioned as typical.
Consulting training	Formal half-day training organised for employees during their first months in the company. Consists of skills, such as trust building, required in consulting that are less relevant in typical software development jobs.
Good Impact Training	Social responsibility program for employees. Employees are compensated by Columbia Road for volunteering in positions where they use their professional skills outside of their working hours.

Couple of interesting factors can be seen from table 4. First, there are few formal training sessions with a set agenda. In fact, the consulting training is the only one identified, with the lessons learned and the Futurice Group learning festival being much less formal with no set topics. This means that there are few formal

topics that all employees of the case company could be expected to know. Either considerable freedom and initiative is expected from employees, or they are expected to learn those informally. Second, there appear to be very few formal learning opportunities. Lessons learned and learning festival happen approximately once a month and consulting training only once. Very little learning would happen if these were the only opportunities utilised.

Further, the opportunities, apart from the checkpoint, are mostly individual learning events. Support for other parts of self-directed learning, such as goal setting or evaluation of learning, seem to be mostly missing. For example, none of the opportunities is really helpful in choosing which learning resources should be utilised, or what learning goals should be set. Some interviewees used the checkpoints to address these but this was not done by all interviewees.

In addition to the formalised learning opportunities, several informal ones were identified during the interviews. These are listed in table 5 along with descriptions gathered from the interviews.

Table 5: Informal learning opportunities

Opportunity	**Description**
Project work	Projects were identified to be the primary learning opportunity, providing time, needs and support for learning. In other words, learning by doing.
Informal training sessions and discussions	Ad hoc discussions, usually spurred by someone directly asking for help on a topic or an link to an interesting article being shared on internal communication channels.
Developer biweeklies	A one hour meeting every second week for all case company software developers. Format varies from presentations on tech topics, problem solving sessions and discussions about the state of technology.
Taking time for individual learning	Employees have the option to use their time for learning. Usually between projects or when an employee is not fully staffed into projects.

These informal opportunities seem to be much more common than the formal ones. Project work is ongoing, informal sessions happen much more often according to the interviewees and biweeklies are, well, every second week. This highlights a possible mismatch in the case organisation's self-management: employee learning is encouraged but few formal opportunities are even provided for employees.

Projects were described to be learning opportunities in several different ways: as platforms for informal learning between team members, as possibilities for trying out new roles, as drivers for identifying learning needs due to new technologies, and by reserving time for learning towards those goals. In other words, they can be seen as being a great example of learning by doing. These varied ways and the time spent in project work would make one expect that learning in projects would be promoted highly. Indeed, management did promote projects as the most important opportunity

for learning in the interviews, but this learning opportunity was still not formalised in any official documents.

The informal training sessions and discussions appear to be the primary method for knowledge sharing in the case company. This can be seen in how all junior and senior consultants mentioned asking a colleague as an important method for looking for knowledge related to other projects or internal information. The importance of this informal knowledge sharing highlights a need for effective way of knowing who to ask for this information. Interviewees who had been at the company for a while were usually comfortable in identifying who to go for a specific information but more recent hires were more uncertain on this. This is an area that will also probably become more challenging as the company grows, as it is impossible to know everyone and their domain of expertise when there are hundreds of people in the organisation.

Finally, biweeklies were a slightly more standardised forum for this informal knowledge sharing. According to one senior consultant, they are a purely employee driven practice started by one junior consultant because they had had a good experience with a similar practice in an earlier workplace. This seems to be a textbook example of self-managing behavior for supporting the learning of individual employees. Other interviewees had also consistently positive feelings towards the practice.

4.1.3 Utilisation and perception of learning opportunities

Table 6 lists the opportunities outlined above with the number of people that are utilising them out of the seven interviewed junior and senior consultants, and how they perceived each. The utilisation includes people who expressed the sentiment that "I use [a practice] regularly", where regularly was encouraged to be defined separately for each by the interviewee. Perception included an overall sentiment from the interviews and aggregated details with no clear differences were noted between junior and senior consultants.

Immediately we can see that utilisation varies considerably between the different learning opportunities. All interviewees utilised some of the opportunities (e.g. checkpoints and project work) and some were not utilised by anyone. As could be expected, we can see that all informal learning practices had at least some utilisation as they arose from the interviews. The difference in utilisation between formal and informal learning opportunities is quite stark, though. Only three formal learning opportunities were used by most interviewees, while all the informal ones were utilised by most interviewees.

Sentiment towards the different learning opportunities varied between very positive and divided, and none were seen as strictly negative. The informal opportunities were seen as positive by all interviewees, while formal ones were more divisive. Comparing the general perception and count of use between practices, we can see a clear connection between positive sentiment and utilisation. This would suggest that interviewees attend and use the opportunities they deem useful. Further, this would hint towards effective self-directed learning: use only the opportunities that are practical for yourself and disregard the others. Most interviewees also highlighted

Table 6: Utilisation and perception of learning opportunities

	Practice, and utilisation (n=7)	**Perception of the practice**
Formal	Checkpoints (7)	Positive. In the context of learning, checkpoints were seen as an opportunity to receive feedback and define future goals.
	Consulting training (6)	Very positive. All interviewees who had attended perceived them as very useful.
	Lessons learned (5)	Positive. Mostly seen as a higher level introduction to less technical topics.
	Futurice learning festival (3)	Divided. Some saw them as an interesting way to see learn about a wider variety of topics and others as being too superficial.
	Possibility to attend conferences (1)	Divided. Many did not see them as useful and some were uncertain about how to decide about attending.
	Good Impact Program (0)	Divided. Seen as a great practice but none of the interviewed participated. Interviewees hoped for examples of past use.
Informal	Project work (7)	Positive. Projects were uniformly seen as the main place for learning. Some were more conscious about selecting projects where they have more learning opportunities.
	Taking time for individual learning (7)	Positive. Perceived as the expected default use of time if one is not in any project currently.
	Developer biweeklies (6)	Positive. Better organised topics were hoped for.
	Informal training sessions and discussions (6)	Positive. Seen as primary method for knowledge sharing.

the perceived usefulness of a learning opportunity for themselves as the primary driver for utilising them.

While projects were not formally recognized as a learning opportunity, it was seen as the primary opportunity for learning by all of management, seniors and juniors. Most interviewees felt that most learning happens during projects and that the other opportunities were more in a supporting role. They could provide context, different approaches or good learning resources but the considerable time spent in projects made them the most significant one. However, there was a perceived lack of support for maximising learning from projects and instead employees learn what they happen

to learn. This could be related to the lack of formality of learning in projects, or simply that employees are expected to handle this inside the project teams.

Effectiveness of projects as a learning opportunity did, however, vary considerably between the interviewees. While most projects were effective learning platforms, others either introduced nothing new to learn, or lacked the time or resources for learning. Especially short projects were highlighted as a challenging environment for learning. While typical projects for developers allow them to focus mostly on a single project for an extended time, some developers had several projects ongoing simultaneously with little time for each in a given week. According to the interviewees, this makes it very hard to use the project time for learning when there is so little to go around to begin with.

Alongside the current opportunities, several ideas for new and currently missing opportunities were highlighted: codified knowledge management, more formal training, especially during onboarding and internal projects. Codified knowledge was expected especially for learning resources and facts on the kinds of projects that the company has worked on. Formal training sessions were highlighted mostly in the context of internal sessions and an "advanced version of consulting training". It can also be noted that domain knowledge might be useful to be taught here, as many interviewees highlighted it as an area where they had little knowledge.

4.2 Self-management and self-directed learning

Four distinct themes were identified from the interviews regarding self-directed learning in a self-managing organisation: individual readiness for self-directedness, prioritisation of learning, identifying learning resources, and feedback.

4.2.1 Individual readiness for self-directed learning

Self-perception of readiness for self-directed learning varied considerably between interviewees and in the different learning needs outlined above. Generally, interviewees felt comfortable with self-directed learning and identified this as a practical necessity in the work they perform but few had concrete strategies, learning goals or methodologies. Two factors could be seen to be related to degree of perceived readiness: topic to be learned and years of professional experience.

Length of professional experience had a fairly clear relation to self-perception of readiness for self-directed learning. Senior consultants appeared to understand their learning process better and had an implicit understanding of the self-directed learning process. Junior consultants were expecting more support from the organisation, especially in evaluating their learning goals and in receiving feedback. Senior consultants seemed to manage both these more independently by seeking support directly from peers. Interestingly, at the same time as it was more common for junior consultants to have longer term learning goals and plans than for senior consultants.

The second dimension with considerable variance was effect of learning topic on perceived readiness. Most interviewees felt much more comfortable in learning topics related to their substance knowledge and less so in areas more related to

professional skills. A senior consultant highlighted this also at the organisational level as a concrete need: “We are often in a role where just the technological knowledge isn’t enough. How do we help people in these situations?” Goal setting and resource identification could be identified as especially difficult parts of the learning process here.

When the self-directed learning process outlined in figure 2 was discussed with the interviewees, most did not find it to be an accurate representation of how they approached learning. There was a fairly common sentiment that several steps of the model were mostly implicit and often did not happen at all. Steps three (formulating learning goals) and six (evaluating learning outcomes) were seen as usually not happening even implicitly, especially in project work. Instead, interviewees claimed to jump directly from learning needs to searching for resources potentially addressing those and skipping any kind of evaluation. However, several interviewees identified the model as a potentially useful framework for reasoning about their learning. Thus providing models such as that one could be a helpful organisational practice to encourage employees to consciously reason about how they learn.

At the organisational level, management mentioned that: “The current model [of support] probably supports people who are already good at learning things by themselves”. A senior consultant had a similar sentiment, mentioning that “We have currently very self-managing people and who do well on their own. How do we support those who are less so?” This current model of support was explained to be one of considerable freedom and personal responsibility; there was limited support from the organisation’s side and employees are expected to manage their learning, starting from allocating the time and resources for it.

As a way to support individuals at different levels, one member of management proposed an idea of having a kind of study counselor as a part of the company’s professional development team. The idea was explained to be similar to the study counselors in universities: they carry no responsibility for learning of any individuals but are there to provide support, resources and tools for success if requested. This practice would retain responsibility and direction at the individual level, while enabling the spreading of useful practices and coaching.

More traditional methods for supporting less self-directed learners were also considered by many interviewees: formal training sessions, internal projects and knowledge management systems. Training sessions were almost uniformly seen as something that the company should have more of, but no consensus could be identified on as to what topics should be covered. Internal projects were seen by a few interviewees as an effective combination of the “learning by doing” of client project work and the lower pressure of internal work. Knowledge management systems, or at least some effective low-barrier way for codifying knowledge, were also discussed by most interviewees as something that the company should have. However, many continued that they were really unsure whether it would be worth the continuous maintenance effort required.

Overall, interviewees claimed that working in this type of an organisation requires considerable level of self-management generally and self-directed learning specifically. This was also evident during interviews, as all seemed to be able to analyse their

learning critically and consider its relation to organisational practices. However, it appears that varying types of support would still be effective, especially in learning needs other than substance knowledge.

4.2.2 Priotisation of learning

"How to prioritise learning in relation to billable work?" - A thought that came up in varying forms in all interviews. Most interviewees recognized a need for professional development and that they are expected to spend some time for learning, but in day-to-day work it was easier to focus completely at their current project. This was put by one interviewee as: "You are always busy in the current project - trying to spend extra time learning would make it even more so".

From the perspective of prioritisation, two categories of learning situations could be identified from the interviews: learning necessary immediately for current project work and learning that does not increase effectiveness immediately. Learning for ongoing project work was seen as part of project work and reserving time for it was seen as expected - to an extent. However, even with learning in project work, two challenges were highlighted. First, time pressure lead to shallower learning than many hoped for. The pressure to deliver quickly was commented to lead to very solution oriented learning instead of an holistic approach that could also help in forming a bigger picture of the topic. Second, projects that required considerable learning sometimes required difficult discussions with clients, as progress on tangible work products was often slower in the beginning than what may have been expected. In general, however, learning in projects was seen to work relatively well.

Outside of projects, taking time for learning was seen as much more difficult to justify. For out of project learning, we can also distinguish between formal and informal learning opportunities. The formal learning opportunities were seen by interviewees as much easier to prioritise even when the events are non-mandatory, as mentioned by one senior consultant - "It's in my calendar - the time is already reserved". Prioritising for informal other opportunities, such as taking time for online courses or reading books, was seen as much more difficult. Indeed, especially reading professional books or attending online courses were usually left for non-working hours as "it's not directly work related".

Employee seniority seemed to have a quite strong effect on prioritisation skills. Senior consultants tended to be better in balancing the priorities without stressing themselves out. Most also highlighted concrete methods they were using to manage the prioritising decisions. At the same time the most of the interviewed junior consultants struggled with making these decisions without consulting others. Alongside the decisions making tools, this difference could be attributed to a combination of a deeper understanding of the 3x2 framework (see section 3.5) and consulting business in general, and thus better implicit understanding of what to base the prioritisation decisions on.

Overall, without a manager to whom to turn to, it seems that many interviewees are in need for concrete tools and more knowledge for making decisions about how to prioritise learning in relation to other work. Providing support for these decisions

should be a priority for any consultancy because, as mentioned by a senior consultant: "The company owns an tax number, practically the only other asset are our employees and what knowledge and skills they have".

4.2.3 Identifying learning resources

Identifying learning resources was brought up in several interviews, often as a challenge. This was primarily connected to three things: judging the quality of external resources, making decisions on spending money on external resources and identifying internal human resources. Further, the lack of an internal sources of codified knowledge was also brought up as a problem that should be addressed.

Almost all interviewees identified internet as their primary learning resource. At the same time, judging the quality of these sources was found to be challenging. Interviewees did not typically directly mention it as a challenge but instead discussed how difficult it was to find quality resources and how much time it took to figure out whether they were useful. The process for judging quality was deemed to be relatively straightforward, but the time investment in bad resources was seen as potentially considerable. Starting an internal collection of good quality learning resources was brought up as a possible solution.

Related to quality, many interviewees were unsure about in which learning resources they should be investing company money. Several mentioned a fear of spending money uselessly. External resources, such as books, online courses and training sessions, are typically not free and are often quite pricey. It seems that in paying for external resources similar issues surface as in prioritisation of learning: everyone is expected to make these decisions by themselves and they are not necessarily ready to make those. Having examples of how people use money for learning was seen as one potential solution for this. Another solution mentioned several times was an individual learning budget that would give employees a concrete amount they are allowed and expected to spend on learning.

Another important learning resource that most interviewees mentioned was coworkers. This was described by one junior consultant as: "The entire office is your mentor. I can go to anyone and ask for help whenever I'm stuck". A culture of asking for and providing assistance could be clearly identified from the interviews and this appeared to act as a fairly effective way of disseminating knowledge across the organisation. However, a challenge was noted in how it was sometimes difficult to identify the person to go to for a given topic. Especially interviewees who had been working in the company for a shorter period of time mentioned this as a challenge.

Finally, there were few common knowledge bases of resources. Interviewees mentioned that there was little technology related knowledge shared internally in a codified manner. Several interviewees hoped for such a knowledge repository but disagreed on achieving one. A shared ownership of the knowledge was seen as a natural result of the organisational structure but this was felt to lead to no one keeping up and organising the knowledge. However, it seems that most of the challenges outlined would be at least mitigated by such system.

4.2.4 Feedback

Receiving and giving feedback were identified as important parts of the learning process in all interviews, but expectations around feedback and perception of the company practices varied between employees. Overall, the amount of feedback was perceived to be on the low side, and only one company wide formal processes related to feedback was identified: the quarterly checkpoints. Some projects teams had good practices, but the practices were often not shared throughout the organisation.

Interviewees divided feedback mostly into two categories: project team feedback and individual feedback. Project team feedback focused mostly on evaluating project management and team working practices, and on improving them consistently. The most used method for doing this was sprint retrospectives as taught in Scrum and similar agile methodologies. This was seen as a method for self-managing the improvement of the working process and organisational learning of the team. Individual feedback was related to the work of a single person and consisted of wide variety of typical practices: checkpoints, design and code reviews, direct commentary and reflection exercises.

The amount and perceived quality of both types of feedback depended a lot on project team an interviewee was working in. One senior consultant mentioned that "We have very few retrospectives in this project but apparently other teams have some every sprint", and several junior consultants mentioned that frequency of feedback had changed considerably when transferring from a project to a different one with a different team. Individual feedback was usually also received mostly from the project team and was thus also heavily dependent on the team. Team size in projects had also an effect on perception of feedback: interviewees working on projects that had larger teams were more positive about the quantity of feedback. Teams of one or two members were seen as much worse than larger ones in this respect, and one junior consultant working alone in a project even mentioned that "I receive feedback only in my checkpoints".

Overall, interviewees felt that they received too little feedback. The expectations around feedback varied somewhat between junior and senior consultants. Junior consultants expected more immediate feedback on their day-to-day work and were less confident in giving feedback to others, especially to more senior consultants. The interviewed senior consultants, on the other hand, expected feedback mostly on their higher level decisions and perceived that they were expected to give more feedback than junior consultants.

The case company did not have any formal processes for providing constant individual feedback apart from the checkpoints. In practice, informal discussions were seen as the primary method for providing feedback and there seemed to exist some efforts to incorporate those into the organisational culture. As a concrete example of this, one member of the management explained that "I have been trying to create a culture of asking for feedback after every meeting". During the thesis work the company management also started to encourage employees to give more constant feedback to each other. According to the interviewed management, these peer-to-peer discussions should be the main source of feedback. However, a senior

consultant discussed for a while whether "we should have more formal way for collecting feedback", as he had identified that it is too easy to forget to give feedback otherwise. This did not lead to any practical ideas for a solution, but does highlight a potential mismatch between management aims and employee practices.

4.3 Key organisational practices for self-directed learning

4.3.1 Decision-making framework

A need for a clear decision-making framework to support self-management of learning could be identified from the interviews. Challenges in decision-making were highlighted clearly in comments on prioritisation of learning and identifying learning resources. The interviewees were expected to make decisions on these by themselves but were sometimes unable to due to unclear expectations around what the decisions should be based on. For example, some interviewees had considered going to conferences but were unsure on what to base their decision about attending them. An organisational decision-making framework thus appears to be an important part of supporting self-management of learning.

In the case company, employees were expected to make decisions using the 3x2 framework outlined in section 3.5. Interviewees found the ideas behind the framework reasonable and felt that it fit well with the rest of the organisational culture. However, many felt that it was severely lacking in some areas, making it too impractical. One junior consultant distilled the problems of using the framework as "3x2 is really general, almost an obstacle. I need a budget for learning". On the other hand, a few interviewees enjoyed the responsibility and trust created by the practices around 3x2 and were able to make decisions comfortably with it.

When in doubt, interviewees tended query their coworkers, and especially the individuals who had been introducing them to the company, whether a decision would be deemed acceptable. This was mentioned by management as semi-formal method of gradually teaching the framework to new employees. Over time, employees appeared to gain an internalised understanding of the rules for decision-making. Management and consultants who had worked in the organisation full-time for a longer time (around six months seemed to be a cut-off point) had a fairly good understanding on how to make these decisions related to learning. However, even their decision-making criteria appeared to be fairly informal and most had challenges defining them if prompted during an interview.

This informality was seen to be a part of the company culture by several interviewees. Overall, there were few formal rules or standard procedures in the case company. Instead there were general guidelines and a culture of making context specific, best effort decisions within those guidelines. Interviewees mentioned that this wide latitude was one significant factor in promoting a good learning culture at the company. Still, many felt that they had difficulties on prioritising learning.

Interviewees, including management, acknowledged many of these challenges in the organisation. Most common suggestions for improvement included more thorough training for new employees, better internal training materials, examples of decisions

in different situations and a learning budget. Learning budget was declined by management as an idea due to the need to learn to make decisions using the 3x2 framework anyway. This was followed by a comment that "People need to learn to understand how the consulting business works to make decisions through 3x2. Examples might be one way of pushing this forward.", highlighting a potential need to do more to help new employees learn the framework. Generally, there was a sentiment that the 3x2 framework has potential but more thorough training is required.

4.3.2 Project staffing

Projects were identified as the primary opportunity for learning by most interviewees. Most working time was spent in projects, and they offered an environment of learning by doing that was found to be very effective. However, it was also noted that the quantity and quality of learning varied between projects. Thus it is evident that the way employees are allocated into projects affects their learning. This allocation process was known as project staffing in the case organisation. Interviewed management explained that project staffing is mostly the responsibility of the sales team with some input coming from the consultants participating in the sales process and the ones who are considered for the project.

The importance placed on learning in project work in the case company was highlighted consistently by interviewees in different roles, for example:

- "Projects are the cornerstone of learning - they are the most effective way for learning and make the most of our working hours" (A member of management)
- "We throw people to the deep end in projects and allow them to learn to swim. Of course we'll throw in a lifejacket afterwards, if needed." (A member of management)
- "My learning is mostly about the immediate problem I'm solving in projects." (A junior consultant)

Statements like these could be expected to lead to learning being an important consideration when staffing projects. While management did mention that the learning goals of employees are considered during the staffing process, they continued that other factors are often prioritised over learning. The perception of both junior and senior consultants was even more stark, and many mentioned thoughts along the lines of "it seems that project selection is done almost only through the project's needs".

This highlights one side of what management members also mentioned: staffing projects is a challenging balancing act between many conflicting considerations. One member of management put the priorities as: "Staffing is primarily about what people are capable of and who is currently free, and somewhat also about what they want to learn, whenever possible". In addition to these, several other considerations were also discussed, with some of the most significant identified to be:

1. Client expectations

2. Appropriate mix of skills, senior and junior consultants in projects
3. Scheduling of consultants and uncertainty in project timelines
4. Rotating people between projects
5. Accommodating learning goals and other wishes of consultants

Out of these, the first two (1-2) consider allocating the correct people in the projects from the point of view of the client and the project: The project has to have consultants who are able perform the required work to a level agreed with the client. The next item (3) is scheduling: projects last for varying times and time out of projects for consultants should be kept to fairly low. Finally, only the last two items (4-5) consider the goals of the consultants and trying to avoid them being in one project too long, unless really wished for by the consultant. Naturally, it is not always possible to allocate people perfectly along all of these considerations, and as mentioned the first three tend to be prioritised over the last two. While not optimal for an individual employee, this would seem quite logical, since the other ones are necessary for project success and the latter two are more extra benefits for the individual.

Alongside these conflicting considerations, two other topics were brought up regarding project staffing: communication of related expectations and decisions, and the relation between project sales and staffing.

Communication challenges were noted in both directions. On one side, they were evident in the different perception of the considerations of the staffing process by consultants and management. While management mentioned that they did try to enable learning, this was often not clear to consultants as explored earlier. On the other side, consultants did not always clearly communicate their wishes to the team doing the project staffing and often did not even have concrete plan themselves. No formal process followed by all employees could be identified for either and this might be one reason for the situation.

Project sales was identified as an important process that affects project staffing as it is what defines the boundaries of staffing - the projects sold are the ones that need to be staffed. Sales was often mentioned in similar context as staffing and especially junior consultants tended to lump them into one process of sales and staffing. In the case company, same people were mostly responsible for both sales and staffing, making this a logical connection.

From this it seems clear that the employees and teams working on staffing projects and sales should be seen as key roles in professional development of consultants. They make the decision that affect where most of learning takes place, as defined by projects being the primary learning opportunity.

4.3.3 Organisational learning

Organisational learning, the systems and processes transforming individual knowledge into collective knowledge (Dixon, 1992), was identified as supporting self-directed learning as a enhancing factor, mostly by providing high quality resources and

learning opportunities. The theme was discussed in all interviews and a common sentiment was that while it was done, “sharing knowledge doesn’t really work”, as stated by one junior consultant.

Knowledge sharing was seen to work relatively well within individual projects. The challenges arose when transforming the often implicit project level knowledge to organisational knowledge was considered. The perceived work required to achieve this seemed to lead to a situation where little was done. The lack of explicit reflection also within projects was identified as one potential reason for the difficulties in sharing knowledge. The lessons learned event was identified to be the only related and even relatively stable organisational practice. One senior consultant further mentioned it as being the only existing process effective for learning more about specifics of other projects. However, they were apparently held fairly rarely and most projects never had one.

The lack of organisational hierarchy was identified by one junior consultant as potentially being another important cause for the challenges in organisational learning. They contrasted the situation in the case company with the one in a typical management consultancy. There an important process for organisational learning was identified to be the senior employees working in several projects and the informal knowledge sharing happening through them. Another junior consultant who had been working alone in a project identified a related need as “I would like to always work in a team with more senior developers”.

Informal learning was seen as the primary way knowledge was shared across the organisation. Outside of project work, informal learning primarily happened through ad hoc conversations and discussions rising from directed questions to subject matter experts. Questions usually arose from from project work, leading to problem solving discussions that acted also as learning opportunities. This was seen as a very effective practice, possibly because the case company appeared to have a culture of helping in these situations whenever possible. The “entire office is your mentor” statement highlighted earlier could be seen as a specific example of this. However, a challenge was noted in how to reach the correct people. Especially employees who had been at the company only for a short time had difficulties in knowing who to reach out to when looking for an expert in a topic.

5 Discussion

5.1 Answers to research questions

This thesis explored the overall research problem of *"How should software consulting companies support self-directed learning of their employees?"* This was approached using three separate research questions.

RQ1: What is employee perception of self-directed learning in a self-managing organisation?

Self-directed learning was seen as an integral part of working in a self-managing organisation. The interviewees saw learning as part of their job and the practices of self-directed learning fit well in the framework of the self-managing organisation. The overall perception was positive, even while formal support provided by the organisation was limited. Prior to the interviews, most interviewees had not considered their learning through the concepts of self-directed learning, but the concepts were seen as useful when introduced. However, learners seemed to have challenges in two parts of the self-directed learning process while learning within the organisation. At the beginning of the process, prioritisation of learning in relation to other work was seen as challenging. At the other end, receiving feedback on performance was often perceived to be difficult.

A simple model was developed in collaboration with interviewees for reasoning about the different learning needs present in the case company. The model, described in section 4.1.1, divides the needs into four categories: *substance knowledge, professional skills, domain knowledge and consulting business knowledge*. Domain knowledge is further divided into general *industry-wide knowledge* and *client-specific knowledge*. This distinction was seen as useful foundation for discussions about learning, as interviewees' learning approaches varied between the categories, with significant differences noted in time spent on learning, in learning methods utilised and on perceived readiness for self-directed learning. While the model was readily adopted by learners as a discussion tool, the categorisation of needs was criticised and several questions, such as where does project management fit and how about leadership skills, were left unanswered.

Outside of the interviews, the model of learning needs could also be utilised in supporting employees in identifying areas of further study, and together with model of the self-directed learning process (Knowles, 1975), act as a basis for formal training sessions on self-directed learning in the case company. A similar model could be used more generally also as tool for goal setting, a part of the learning that did not receive much attention from the interviewees. However, the model was created for the needs of the case company, so direct generalisability is probably relatively low. The model might be fairly well applicable to other software consultancies and somewhat applicable to other professional services companies due to similarities in central business processes and needs being explored in related literature (Maister, 1997). Applicability beyond firms in those categories is most likely low.

Prioritising learning in relation to client work was found to be quite difficult for interviewees. While professional development was promoted in the case company as a priority, the nature of consulting business is such that working in client projects is easily seen as priority. This is simply due to company revenue being based primarily on the amount of client work performed. Still, consultants need to spend time on developing themselves professionally to stay as experts (Maister, 1982). Interviewees noted that making these choices was often quite difficult and that they would expect more support on making them. This seems to provide evidence for earlier research that has identified that self-management in teams may lead to frustration (Bunderson & Boumgarden, 2010). Identifying methods to help employees make these decisions thus should be a priority for such organisations.

Alongside prioritisation, collecting feedback on one's performance was also seen as challenging. With no direct supervisors, several interviewees had found that they received little feedback unless they actively sought it out. Feedback was mostly received from the immediate project team and thus the quantity and quality depended considerably on that team. Outside of projects, a quarterly checkpoint was the only formal opportunity for receiving any feedback. The case company has been improving the situation by encouraging a culture of giving constant, peer-to-peer feedback. This practice started only during the thesis project, so effects were not yet remarkable, but similar practices have been found useful (e.g., Rana et al., 2016). However, the challenges indicate that self-managing organisations should be considering how to effectively collect and share feedback.

RQ2: How does a self-managing consulting organisation support self-directed learning?

The support provided by the case company was fairly minimal and put most of the responsibility on the employee, and interviewees recognised that this support provided was well suited for learners at a high degree of readiness for self-directed learning. While all interviewees claimed to be proficient self-directed learners in the area of their own expertise, many continued that they were far from that in some of the learning needs identified in section 4.1.1. As Grow (1991) also highlighted, the readiness for self-directed learning is quite strongly dependent on the topic at hand and this should be taken into account when considering training plans. So while a self-managing organisation might employ mostly proficient self-directed learners, it should be able to support them on a lower degree of self-directedness in different topics.

On a practical level, the support was mainly structured around providing resources and opportunities for learning, and project staffing.

The case company provided several formal and informal learning opportunities for its employees. These are listed in tables 4 and 5, respectively. The formal opportunities were relatively scarce and the informal opportunities were deemed to be the more important ones. The formal opportunities were seen to be effective for sharing both more shallow and easily codified knowledge, while the informal opportunities appeared to be used for more in-depth learning. Utilisation of the different opportunities also varied considerably, with one formal opportunities being

used by none one of the interviewees. While indicating that maybe there opportunities are not the most effective, it also indicated that the interviewees are able to prioritise using the learning opportunities that seem to be useful for them.

Out of the learning opportunities identified, project work was seen as the most important one. Projects were seen as the perfect example of learning by doing and as creating new learning needs. They were also seen to act as platforms for informal learning between team members and as a possibilities for trying out new roles. With project needs being driven primarily by the organisation, the focus on projects as the most important learning opportunity appears support the sentiment by Spear and Mocker (1984) and (Confessore, 1997) that considerable part of also the self-directed learning happening at the workplace is in end driven by organisational needs. Project staffing at the case company aimed to take into account the learning goals of consultants, balancing them against client wishes and project management practicalities, such as timelines and resource constraints.

Learning resources available at the organisation were primarily human resources. While there were also material resources, coworkers and their knowledge were seen as the quality ones. A statement from one interview highlights this well: "The entire office is your mentor. I can go to anyone and ask for help whenever I'm stuck". This kind of open communication has been identified to be key in supporting self-directed learning (Rana et al., 2016) and experiences in the case company seem to further support that.

RQ3: What are key organisational practices affecting self-directed learning in self-managing consultancies?

It seems to be clear based on the interviews that organisational practices have a considerable effect on the self-directed learning of their employees. While the variety of practices affecting learning is necessarily broad, three key ones were identified based on data analysis: decision-making framework, project staffing and organisational learning. While other practices were noted, these featured prominently in the interviews and were specifically related to both the self-managing organisational structure and self-directed learning.

First, a need for a clear *decision-making framework* was evident in the interviews, judging solely on the number of interviewees mentioning challenges in prioritising learning over other work. As self-management is built around the idea of decentralising decision-making authority (Lee & Edmondson, 2017), these choices are left to individual employees instead of their managers. This decentralisation also means that the amount of people making meaningful choices in these organisations is much higher than in a more hierarchical ones. In this environment the guidelines and processes for making choices, a decision-making framework, rise in importance in order to ensure effective decision-making. In the case organisation, lack of clarity around the framework mostly lead to unnecessary stress, but it could as well lead to, for example, conflicting decisions due to unclear criteria. Therefore, a decision-making framework appears to be one of the formal structures that self-managing organisations should invest in. While avoiding unnecessary structure is a central part of self-managing

organisations (Anderson, 2019), the lack of necessary structure in self-managing teams has also been found to lead to member frustration and sub-standard resource use Bunderson and Boumgarden (2010). Furthermore, while the case company did have a framework for making decisions, several interviewees mentioned that its vagueness lead to new employees being uncomfortable with making decisions based on it. Thus, effectiveness seems to necessitate not only having a framework for making decisions, but also making it as clear and self-evident as possible.

Second, *project staffing* appears to be likely the most important practice for supporting self-directed learning in a software consultancy. As project work was identified to be where most learning happens, and the opportunities provided by each project vary considerably, the way employees are allocated into these projects affects their learning considerably. Thus, through staffing the organisation has considerable power to direct the learning of their employees. This is in line with earlier arguments by, for example, Spear and Mocker (1984) who argued similarly that organising circumstance, not personal planning, is the driving force behind much of self-directed learning. Therefore, self-managing organisations need to carefully consider their processes around staffing and how learning is taken into account.

Finally, *organisational learning* was identified to be an important enabler for self-directed learning, as it made knowledge unique to the organisation available across the organisation. Organisational learning has already been identified to be an important part of self-directed learning in organisations (e.g., Confessore & Kops, 1998) and challenges have also been identified (e.g., Dixon, 1992). Alongside these perspectives, one challenge specifically related to self-managing organisations was noted based on the interviews: sharing knowledge from individual projects teams to the rest of the organisation happened only informally. Interviewees identified the lack of internal project team reflection and the lack of hierarchy in the organisation as possible causes for this. While the former might be relatively easy to mitigate by encouraging specific practices of reflection, the second poses a more difficult challenge. Hierarchy was seen by several interviewees to enable organisational learning through senior managers managing and advising the work of several project teams at a time, and thus sharing knowledge across the team boundaries. Clearly, this way of structuring work goes against the principal idea of self-managing organisations: decentralisation. Romme (1996) also noted this challenge and argued that while teams are more effective in learning new topics and producing novel knowledge, the larger hierarchy is necessary in order to process and retain this information effectively. Thus, if self-managing organisations are to maximise organisational learning, they may need to implement novel processes to effectively replace the stability and processing provided by the hierarchy.

5.2 Theoretical implications

The primary theoretical contribution of this thesis is a deeper understanding of some of the organisational practices affecting self-directed learning and in examining employee perception of self-directed learning in self-managing organisations.

The findings support self-managing organisations benefiting from having concrete

structures and practices, at least around decision-making. Uncertainties in making decisions about prioritisation of learning were noted to be frustrating for some interviewees and clarity of decision-making framework was noted as a potential solution.

The importance placed on project staffing provides further evidence to the argument by Confessore (1997) and Spear and Mocker (1984) that external circumstances, especially at the workplace, are a significant driver for the direction of self-directed learning. Some further support was also found to the organisational practices outlined in Rana et al. (2016) and Confessore and Kops (1998) being effective in supporting learning also in self-managing organisations.

This thesis showed the practicality of analysing organisational practices through the model of self-directed learning process by Knowles (1975). Useful insights were discovered for the case company and theory through analysing interviews through the six steps of the process.

Finally, the learning needs model described in section 4.1.1 provides a starting point for further research on the competences required in software development consulting. While related topics, such as formation of software development expertise (Baltes & Diehl, 2018), have been researched no other models focusing on the competences required in this context could be identified during literature review.

5.3 Practical implications

This thesis identified several organisational practices and processes that should be considered when planning ways to support self-directed learning in self-managing organisations. While few direct recommendations can be given, several areas that should be covered during organisation design process were identified. The implications are most applicable in self-managing consultancies, but many of the recommendations are likely generalisable to professional service firms and other knowledge-intensive organisations.

Self-managing organisations should consider how to support employee learning in topics where they are less self-directed than expected. While employee readiness for self-directed learning is usually high in their core competence, it likely is much lower in some areas they need to learn. Therefore supporting learners in a variety of differing stages of readiness for self-directed learning is necessary for effective learning. This is especially important in self-managing organisations as the lack of direct supervisors might lead to delayed feedback on ineffective learning.

Self-managing organisations should consider replacements for the learning related functions traditionally handled by line managers. A central part of decentralisation in organisations is usually a reduction in the amount of managers. As their responsibilities are decentralised, a wide variety of processes related to supporting employee learning easily lose the attention they had before. As the effects of lower investment in learning take time to appear, the situation may persist for extended periods of time without notice. Effective feedback and knowledge sharing processes are examples of an areas that require explicit planning.

Consulting organisations should prioritise allocating employees into projects with

suitable learning opportunities. Project work was identified as the primary learning opportunity in a consultancy and thus organisations should aim to maximise the benefit of these opportunities. The staffing and sales organisation needs to be capable of doing these decisions by having access to the necessary competences and information.

Self-managing organisations should provide efficient ways for searching for expertise inside the company. Informal learning was identified to be another important learning and knowledge sharing opportunity in self-managing organisations. These informal learning opportunities were often based on learners being able to find experts that were able to assist them in a specific learning need. For this to happen, an effective way to find these expert resources based on the learners need is needed.

5.4 Limitations

Evaluating the validity of qualitative case studies has been found to be more challenging than that of quantitative research (Yin, 2014). Dubois and Gadde (2014) argue that this is in part due to the typical approach taken to evaluating validity being unsuited for evaluating the analytical generalisation process utilised. Instead, a broader approach that bases more weight on accurate and thorough depiction of the research process and quality of case presentation should be utilised to enable readers to interpret the results in an accurate context of the case (Dubois & Gadde, 2014). To this end, the limitations of the thesis results are discussed through the validity criteria identified by Whittemore, Chase, and Mandle (2001). These include the primary criteria of credibility, authenticity, criticality and integrity. Together these criteria form a reasoned baseline for evaluating validity of qualitative research (Whittemore et al., 2001).

While straightforward generalisability of the results is not necessarily the goal of case studies, some broader insights are usually sought (Dubois & Gadde, 2014). Thus, to begin with, the typical generalisability challenges of case studies relevant to this study are noted: The experimental data was based only on software developers, in a single company and in a single country. Furthermore, the time scale was relatively short, with the interviews being completed over a span of one month and thus identified improvements could not be validated in the case company. Therefore, the possible effect these may have on the results should be taken into account whenever considering the results.

Credibility is the core of qualitative research (Lincoln, 1985). Its concern is on assuring that the results reflect the experience of informants in an accurate and believable way (Whittemore et al., 2001). The thesis takes care to base reasoning on accurate data from the interviews and to clearly separate interpretation from reporting. Direct quotes and clearly documented analysis process are used to further support this.

Authenticity refers to the degree the reported research remains true to the phenomenon studied (Whittemore et al., 2001). The primary way this is ensured in the study is through the direct quotes from interviewees. In addition to them, care was taken during writing to consider the light opinions are discussed in and to

preserve interviewee voice when reporting results. The case company has also been described in detail to provide context for readers interpreting the results.

Criticality on methods, analysis and other aspects of research is necessary for ensuring validity (Whittemore et al., 2001). To this end, alternative approaches and hypotheses were considered and evaluated throughout the research process. The systematic combining research strategy utilised encouraged exploring several different hypotheses through the matching and redirection process (Dubois & Gadde, 2014). Furthermore, various viewpoints are considered in the discussion and reflected on in relation to earlier research.

Integrity refers to preserving grounding in theory and reasoning alongside the subjectivity necessary in the interpretative nature of qualitative research (Whittemore et al., 2001). Alongside this necessary subjectivity, a further challenging factor was the author's position as an employee of the case company during the research project. The thesis project aimed to preserve integrity through constant comparison of interpretation to collected data and existing theory, and external checks. The research approach of incrementally constructing the case and grounding of analysis at each stage on existing research lead to constant evaluation of results through theory and new data. This was approach was supplemented with periodic discussions with the thesis supervisor acting as an external observer.

5.5 Further research

Based on the discussion, several areas of further research were identified. Four interesting ones are highlighted below.

First, replicating a similar study as a multi-case in other professional services organisations would allow for broadening on the topic. Specifically, testing the validity of the practical implications and developing them further seems to offer a fruitful direction based on discussions with industry practitioners.

Second, the model of the learning needs of software development consultants could be developed further. At the current stage it was recognised to be helpful at the case company, but a more general and comprehensive model could be developed for wider use in software consulting.

Third, overall the research on effects of increasing degree of self-management on self-directed learning appears to be scarce, and while this thesis presents one outlook, much further research is required.

Finally, the relation of the very free self-directed learning in self-managing organisations to organisational learning and knowledge management should be studied. The topic was discussed briefly and it appears that they are important processes for ensuring effective learning and avoiding reinventing too many wheels.

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A Interview questions

Background information

Describe shortly your professional experience so far. How long have you been at Columbia Road? What is your role and responsibilities? Do you work as a full-time employee?

Theme 1: Personal self-directed learning

Describe a situation where you had to learn something for work. How did the process go?

A. Diagnosing and goal setting: Do you know what to learn next? Do you have learning goals? Are you aware of the skills you need? Considerable freedom - how do you decide what to learn?

B. Research: Who do you go to for support? Where do you search for information?

C. Effort: Where do you learn the most? How much time do you spend learning?

D. The learning itself

E. Evaluation: Do you know how to learn effectively? Do you reflect on your learning? Do you think about these?

How do you feel about this kind of a learning process?

1. Climate setting
2. Diagnosing learning needs
3. Formulating learning goals
4. Identifying human and material resources for learning
5. Choosing and implementing appropriate learning strategies.
6. Evaluating learning outcomes

Theme 2: Learning in projects

Choosing projects where to work? Reflection at the beginning of projects? Learning during projects? Different roles in projects? Feedback in projects?

Theme 3: Wider organisational support for learning

A. Culture and processes: How is the learning culture in the company? Goals for employee learning? Time spent on learning? 3x2? How much should the company support your learning? Feedback outside of projects? Knowledge sharing?

B. Formal learning events: What processes CR has for supporting learning? What learning opportunities there are in CR? How useful each one is for you? How are these learning opportunities explained during onboarding? Should the company have more, less? Something new? Have you organised any? Why (not)?

Formally, the company has:

1. Checkpoints

2. Lessons learned
3. Biweeklies
4. Futurice learning festivals
5. Conferences
6. Internal consulting training
7. Plan for competence area playbooks - not really in tech
8. Good impact program

C. Support for different parts of the learning process outlined earlier

D. Other practices: What practices have you had at earlier companies? Should we create a longer term benchmark from this that we can use e.g. Officevibe for? Tech skills vs general consulting skills, is there a difference? Mentoring? Recruitment?

B Documents covered in document analysis

Columbia Road and Futurice documents related to employee learning were analysed as a secondary sources of background information. The documents analysed included:

1. Columbia Road employee handbook
2. Columbia Road strategy presentation for 2019
3. Futurice Culture Handbook
4. Futurice learning canvas
5. Futurice learning strategy reports for 2014 - 2019